

**Internal distribution code:**

- (A) [ - ] Publication in OJ
- (B) [ - ] To Chairmen and Members
- (C) [ X ] To Chairmen
- (D) [ - ] No distribution

**Datasheet for the decision  
of 11 May 2016**

**Case Number:** T 0473/13 - 3.5.02

**Application Number:** 98103916.7

**Publication Number:** 0868002

**IPC:** H02J3/36

**Language of the proceedings:** EN

**Title of invention:**

A plant for transmitting electric power

**Patent Proprietor:**

ABB AB

**Opponents:**

Siemens Aktiengesellschaft  
ALSTOM Power AG

**Relevant legal provisions:**

EPC Art. 100(a), 100(b), 100(c), 54, 56  
EPC R. 89  
RPBA Art. 13(1)

**Keyword:**

Intervention of assumed infringer - admissible (yes)  
Grounds for opposition - added subject-matter (no) -  
insufficiency of disclosure (no)  
Novelty - (yes)  
Inventive step - (yes)  
Late-filed prior use allegation - admittance (yes)  
Prior use - public availability (no)



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

European Patent Office  
D-80298 MUNICH  
GERMANY  
Tel. +49 (0) 89 2399-0  
Fax +49 (0) 89 2399-4465

Case Number: T 0473/13 - 3.5.02

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.02**  
**of 11 May 2016**

**Appellant:** Siemens Aktiengesellschaft  
(Opponent 1) Wittelsbacherplatz 2  
80333 München (DE)

**Representative:** Siemens AG  
Postfach 22 16 34  
80506 München (DE)

**Respondent:** ABB AB  
(Patent Proprietor) 721 83 Västerås (SE)

**Representative:** Zimmermann & Partner  
Patentanwälte mbB  
Postfach 330 920  
80069 München (DE)

**Intervener:** ALSTOM Power AG  
(Opponent 2) Boveristraße 22  
68309 Mannheim (DE)

**Representative:** Molnia, David  
Df-mp Dörries Frank-Molnia & Pohlman  
Patentanwälte Rechtsanwälte PartG mbB  
Theatinerstraße 16  
80333 München (DE)

**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted on 20 December 2012 rejecting the opposition filed against European patent No. 0868002 pursuant to Article 101(2) EPC.**

**Composition of the Board:**

**Chairman**            G. Flyng  
**Members:**            R. Lord  
                              W. Ungler

## Summary of Facts and Submissions

- I. This is an appeal of the opponent against the decision of the opposition division to reject the opposition against European patent No. 0 868 002.
- II. With the statement of grounds of appeal dated 19 April 2013 the appellant (opponent 1) presented arguments relating to added subject-matter, lack of novelty and lack of inventive step with respect to claim 1 of the granted patent. In the context of novelty and inventive step they referred to the following documents which had been filed during the procedure before the opposition division:
- D4: "PWM and Control of Two and Three Level High Power Voltage Source Converters", Doctoral Thesis by A. Lindberg, Royal Institute of Technology, Stockholm, 19 May 1995,
- D5: "MPS cables could be MIND blowing for 1200 MW links", Modern Power Systems, Wilmington Publishing, UK, July 1996,
- D6: "High Power Electronics, HVDC and SVC", Å. Elkström, Royal Institute of Technology, Stockholm, June 1990 (Chapter 1 and parts of Chapter 11),
- D13: US 4 941 079 A, and
- D18: "EHV-AC and HVDC Transmission Engineering and Practice", S. Rao, Khanna Publishers, Delhi, second edition, 1996, pages 950 to 973.

With the statement of grounds of appeal the appellant also filed the remainder of Chapter 11 of D6.

- III. With a letter dated 12 August 2015 the company Alstom Power AG (opponent 2, referred to in the following as

the intervener) filed an intervention as an assumed infringer according to Article 105 EPC. This letter comprised firstly arguments and evidence relating to the admissibility of the intervention, secondly a request that the European patent No. 0 868 002 be revoked in its entirety, and thirdly arguments relating to opposition grounds of insufficiency of disclosure (Article 100(b) EPC), added subject-matter (Article 100(c) EPC) and lack of inventive step (Article 100(a) EPC in combination with Article 56 EPC). In the context of the last of these grounds they referred to certain of the documents listed under point II above, and additionally to the following documents which had been cited in the appellant's original statement of opposition:

- D1: US 4 274 990 A,
- D7: "Behaviour of Extruded HVDC Power Transmission Cables: Tests on Materials and Cables", M. Pays et al, International Conference on Large High Voltage Electric Systems, 28 August to 3 September 1988, paper 21-07,
- D8: "Insulation Properties of 250kV DC XLPE Cables", H. Fukagawa et al, IEEE PES Winter Meeting, 1 to 6 February 1981, paper 025-6,
- D9: "Results of tests using continuous high voltage on low density polyethylene insulation", X. Bourgeat et al, Jicable 95, paper E.5,
- D10: "Comparison between the space charge distribution and the DC breakdown voltage of synthetic insulation", J. Bezille et al, Jicable 91, pages 542 and 546,
- D11: "Development of DC  $\pm$  250 kV XLPE cables and factory joints", Y. Maekawa et al, Jicable 91, pages 554 and 560,

- D12: "le transport d'énergie par câble à isolation synthétique", P. Penserini et al, *Epure*, 1996, no. 48, pages 25 to 37,
- D14: "Development of the New Polymer Insulating Materials for HVDC Cable", N. Yoshifuji et al, *IEEE Transactions on Power Delivery*, vol. 7, no. 3, July 1992, pages 1053 to 1059,
- D15: "Research and development of DC XLPE cables", Y. Maekawa et al, *Jicable 91*, paper B.9.3, and
- D16: "On the Use of Doped Polyethylene as an Insulating Material for HVDC Cables", M. Salah Khalil, *Conference Record of the 1996 IEEE International Symposium on Electrical Insulation*, Montréal, 16 to 19 June 1996, pages 650 to 653.

They also referred to the following newly-introduced documents:

- D19: "Advances in Pulse Width Modulation Techniques", Doctoral Thesis by X. Wang, McGill University, Montréal, March 1993, Chapters 1 and 2,
- D20: "Electrical Engineer's Reference Book", M.A. Laughton and M.G. Say (Ed.), Butterworths, 14th Edition, 1985, pages 34/1 to 34/22,
- D21: US 4 263 517 A,
- D22: WO 84/02807 A1,
- D23: WO 96/06477 A1, and
- Exhibit III: "The new 525 kV extruded HVDC cable system", A. Gustafsson et al, ABB Grid Systems, Technical Paper August 2014.

The evidence submitted concerning the admissibility of the intervention consisted of:

Exhibit I: Infringement Action LG Mannheim, docket no. 2 O 96/15, complaint dated 8 June 2015, and

Exhibit II: Excerpt of the commercial register of Amtsgericht Mannheim, HRB 8660.

IV. The respondent (patent proprietor) replied to the appeal and the intervention respectively with letters dated 10 September 2013 and 17 December 2015. These letters addressed the appeal grounds and the grounds of opposition raised by the intervener, the former included a request that the appeal be dismissed and the latter also contained a set of claims 1 to 6 according to an auxiliary request.

ü

V. With a letter dated 15 February 2016 the intervener presented further arguments concerning the grounds of opposition raised in the intervention letter as well as some of the grounds raised by the appellant, and arguments concerning the respondent's auxiliary request. In this letter the intervener also raised objections of lack of novelty and lack of inventive step based on an alleged public prior use evidenced by newly-filed documents D24 to D27.

With a further letter dated 23 February 2016 the intervener filed a new document as D26 replacing that filed with the letter of 15 February 2016, and requested that the document previously filed as D26 be renumbered as D28. Thus the documents filed as evidence for the alleged public prior use are as follows:

- D24: "Electric power transmission to distant loads by HVDC Light", G. Asplund et al,
- D25: "HVDC Light - DC transmission based on voltage sourced converters", G. Asplund et al,
- D26: "DC Transmission based on Voltage Source Converters", G. Asplund et al,



D27: "Small Scale Transmission to AC Networks by HVDC Light", K. Eriksson et al, and

D28: "DC Transmission based on Voltage Source Converters", G. Asplund et al, CIGRE SC14 Colloquium in South Africa 1997.

VI. In a communication accompanying a summons to oral proceedings, dated 25 February 2016, the board informed the parties *inter alia* of its preliminary opinion that the grounds for opposition under Article 100(b) and (c) EPC did not prejudice the maintenance of the patent as granted, and that the evidence presented by the intervener relating to the alleged public prior use was not sufficient to establish availability to the public.

VII. In a reply to that communication, dated 11 April 2016, the respondent *inter alia* requested that the alleged public prior use, together with the documents D24 to D28, not be admitted into the proceedings. In this respect the respondent also filed an affidavit by Lars Weimers concerning the "Hellsjön Project".

VIII. Oral proceedings before the board took place on 11 May 2016, at which, as indicated in a letter dated 8 April 2016, the appellant was not represented.

The appellant requested in writing that the decision under appeal be set aside and that the European patent be revoked.

The intervener also requested that the decision under appeal be set aside and that the European patent be revoked. Furthermore the intervener requested that the respondent's auxiliary request not be admitted into the proceedings.

The respondent requested that the appeal be dismissed and that the intervener's opposition be rejected, auxiliarily that the patent be maintained in amended form on the basis of claims 1 to 6 of the auxiliary request filed with letter dated 17 December 2015.

IX. Claim 1 of the patent in suit reads as follows:

"[1.1] A plant for transmitting electric power between a direct voltage network (1) for High Voltage Direct Current (HVDC) included therein and at least two alternating voltage networks (6, 7) connected thereto through a station (4, 5) each,  
[1.2] said stations being adapted to perform transmitting of electric power between the direct voltage network and the respective alternating voltage network,  
[1.3] said plant being of the type with possibility to feed electric power through the direct voltage network in both directions between the stations, characterized by  
[1.4] the combination of on one hand the arrangement of at least one voltage-stiff converter, i.e. a VSC-converter (8, 9), in each station for converting direct voltage to alternating voltage and conversely,  
[1.5] and on the other the arrangement of at least one cable (2, 3) with an insulating layer (12) of polymer base surrounding the conductor (11) thereof for forming the direct voltage network interconnecting the stations,  
[1.6] in which said at least one VSC-converter is adapted to control changes of said feeding direction of electric power through the direct voltage network without polarity change of said conductor by changing the direction of the current through said cable."

(Feature numbering as proposed in the statement of opposition and adopted in the decision under appeal.)

- X. The arguments of the appellant which are relevant for the present decision can be summarised as follows:

Feature 1.6 of the granted claim 1 had no basis in the application as originally filed, since, as argued before the opposition division, it covered alternatives for the functioning of the VSCs which were not disclosed in the original application.

Document D6 explicitly disclosed a system including all the technical features of the granted claim 1 with the exception of the polymer-based cable insulation, which the skilled person would have considered to be implicit given the teaching of that document concerning the disadvantages of other types of line. If this were not considered implicit, then it would have been obvious in the light of the teaching of D5 or D18.

The claimed invention was also obvious in the light of either D4 or D13 in combination with D5 or D18. Documents D4 and D13 both described transmission systems using VSCs at both ends of the link, together with the resultant possibility of bidirectional transmission without polarity reversal. The selection of polymer-based cables for the link was then obvious for the skilled person.

- XI. The arguments of the intervener which are relevant for the present decision can be summarised as follows:

The intervention satisfied the formal requirements of Rule 89 EPC, as evidenced by Exhibits I and II, and was therefore admissible.

If it were not concluded that the skilled person was aware that the use of VSCs enabled bidirectional operation of the DC link without polarity reversal, then objections of added subject-matter and insufficiency of disclosure would arise.

A further objection under Article 100(b) EPC arose as a result of the contradiction between paragraph [0005] and paragraph [0007], second sentence of the patent, given the absence of any other teaching regarding the nature of the polymer-based insulation. That special material selection was required was emphasised by the teaching of Exhibit III.

When the first full paragraph of page 11-33 of D6 was properly interpreted in the light of common general knowledge and the disclosure of other parts of that document (in particular the preceding paragraph and passages on pages 11-4 and 11-18), the skilled person would have understood it as disclosing all the features of the granted claim 1 with the exception of the polymer-based cable insulation. The selection of this alternative to oil-impregnated paper insulation would have been obvious in the light of prior art such as D15 and D11, in particular given the known cost advantage of polymer-based cables.

The claimed invention was for similar reasons obvious starting from D4 or D13 in place of D6. In particular concerning D13, the skilled person would have recognised that the embodiment of figure 31, although described as being unidirectional, would in fact have been capable of bidirectional operation, since this was suggested by the passage at column 41, lines 45 to 54.

Starting from one of the documents describing high voltage cables with polymer-based insulation (such as D15 or D11), a technical problem could be formulated as being to develop a system making use of the properties of these cables. The provision of converters in the form of VSCs, thus enabling bidirectional transmission without polarity reversal, would then have been obvious in the light of prior art such as D13, D19 or any of D21 to D23.

The alleged public prior use should be admitted into the procedure, since it was clear from the documents D24 to D28 that the system installed was as defined in granted claim 1, so that the prior use was at least *prima facie* highly relevant.

Since the prior use was by the respondent, the criterion for the burden of proof concerning the confidentiality agreement was the "up to the hilt" one. That would have required the respondent to present at least a copy of such an agreement. Since they had not done so, the confidential nature of the prior use was not sufficiently proven, so that it had to be assumed that the prior use was public.

XII. The respondent argued essentially as follows:

The conclusion in the decision under appeal concerning the interpretation of feature 1.6 in the context of added subject-matter was correct. The knowledge of the skilled person in this respect was as suggested by the intervener, so that the disclosure of the patent concerning this feature was sufficient within the meaning of Article 100(b) EPC.

The disclosure of paragraphs [0005] and [0007] of the patent was not contradictory, since the skilled person would have understood that the first concerned the general requirement for carrying out the invention, whereas the second concerned optimisation for particular applications. Exhibit III was not relevant because it concerned systems operating at higher voltages than envisaged in the patent.

The disclosure in the second paragraph of page 11-33 of D6 was ambiguous, since it could have been understood that the reference to the advantages of VSCs related only to the multiterminal stations, and not to the cables, so that the skilled person would have understood that the cable transmission could use VSCs or CSCs. Thus, to arrive at the claimed invention would have required two selections, one of the converter type and one of insulation material. This combined selection was not obvious because it gave rise to a synergetic effect, specifically that the bidirectional operation without polarity reversal enabled by the use of VSCs avoided the space charge problems of polymer cables.

D4 and D13 were less relevant than D6. D4 only disclosed back-to-back links, so contained no suggestion of a cable connection. The embodiment of figure 31 of D13 was clearly stated as being unidirectional, so also could not lead to the claimed invention.

The intervener's inventive step argument starting from D15 or D11 was based on an artificial formulation of the technical problem, since no skilled person would start the development of a transmission system with the selection of the cable.

The late-filed allegation of public prior use should not be admitted into the procedure, because it was evident from the circumstances of the prior use that the necessary information had not been made public, firstly because employees of the utility company would not have been able to see that the converters were VSCs or that the cable insulation was polymer-based, and secondly because it was normal in the circumstances of such projects for those involved to be bound by a confidentiality agreement.

The arguments presented concerning the circumstances of the project were alone sufficient to discharge the burden of proof concerning the confidentiality of the prior use. This was confirmed by the affidavit. Thus the burden of proof was shifted to the intervener. The "up to the hilt" criterion for the level of proof did not apply, in particular because the intervener could have contacted the utility VB-Elnät to attempt to establish from them whether a confidentiality agreement had been in place. Since they had not done so, the public availability of the prior use had not been proven.

### **Reasons for the Decision**

1. The appeal is admissible.
2. *Admissibility of the intervention (Rule 89 EPC)*

The intervention was filed within the period defined in Rule 89(1) EPC and meets the formal requirements of Rule 89(2) EPC in combination with Rule 76 EPC (see Exhibits I and II), and so is admissible. This was not

disputed by the respondent. The intervener therefore has the status of opponent in the present procedure.

3. *Added subject-matter (Article 100(c) EPC)*

3.1 The appellant's objection of added subject-matter relates to the interpretation of feature 1.6 of the granted claim 1, and is essentially the same objection as that raised in the procedure before the opposition division, which was addressed in sections 2.2 to 2.2.3 of the decision under appeal. There the division firstly argued that feature 1.6 had to be read in the context of the claim as a whole, from which it was clear that there could not be just a single VSC, since it was defined that each of the at least two stations included at least one VSC. Secondly they argued that column 4, lines 14 to 22 of the published application had to be read in the context of lines 1 to 9 of the same column, from which it was similarly clear that the control of current direction involved the VSCs in both stations. Since the arguments in the appellant's grounds of appeal addressed only feature 1.6 and column 4, lines 14 to 22 of the patent, they did not address this reasoning of the decision under appeal. The board therefore sees no reason to deviate from the conclusion in the decision concerning the manner in which the skilled person would have interpreted that feature.

3.2 The intervener also raised an objection of added subject-matter, but this was raised only for the case that it was not accepted that the skilled person was aware that the use of VSCs inherently allowed bidirectional power transfer without polarity reversal. This knowledge was not disputed by the respondent, and the board also sees no reason to doubt it. It is thus



not necessary to address the substance of this objection.

3.3 The board therefore concludes that the opposition ground under Article 100(c) EPC does not prejudice the maintenance of the patent as granted.

4. *Sufficiency of disclosure (Article 100(b) EPC)*

4.1 The intervener raised two different objections that the disclosure of the patent was not sufficient within the meaning of Article 100(b) EPC. The first of these was conditional on the same issue relating to the knowledge of the skilled person as discussed in 3.2 above, and therefore for the same reason as given there does not need to be addressed further.

4.2 The intervener's second objection concerned the nature of the polymer-based insulation. Specifically the intervener argued that the disclosure of the patent in this respect in paragraph [0005] and in the second sentence of paragraph [0007] was contradictory, and that the skilled person would thus have understood from the latter that in order to carry out the invention it was necessary to use a specially selected insulating material, but would not have been able to derive any teaching from the patent as to how to make that selection. The board on the other hand agrees with the respondent that the skilled reader would not see any contradiction between these two passages, but would instead learn from the first that the claimed invention could be put into practice using the types of cable already known for HVAC systems, and from the latter that in order to achieve optimum performance in any particular circumstances specially developed materials might be required. In the view of the board this

reflects nothing more than the normal situation that material properties have to be optimised for use in specific applications. The document cited by the intervener as Exhibit III has no influence on this conclusion, because its teaching relating to insulating materials concerns systems operating at even higher voltages than those considered in the patent in suit.

- 4.3 The board therefore concludes that opposition ground under Article 100(b) EPC does not prejudice the maintenance of the patent as granted.
5. *Novelty (Article 100(a) EPC in combination with Article 54 EPC)*

The appellant raised an objection of lack of novelty of the subject-matter of granted claim 1 with respect to document D6. It is not disputed that this document describes *inter alia* systems of the general type claimed, in particular those making use of VSCs. However, the only disclosure in this document of links in which the converters are connected by a cable (as opposed to being back-to-back or connected by an overhead line) is in the first full paragraph on page 11-33, which merely indicates applications for "cable transmission". There is thus no disclosure in this document as to the nature of the cable insulation. The board does not agree with the appellant's assertion that the skilled person would consider the use of a polymer-based insulation as implicit, because it would also be possible that the insulation would be of oil-impregnated paper (i.e. the known insulation type discussed in the introductory part of the patent in suit). Thus, at least feature 1.5 of claim 1 of the patent as granted establishes novelty over D6, so that, as far as the documentary prior art is concerned, the

ground for opposition under Article 100(a) EPC in combination with Article 54 EPC does not prejudice the maintenance of the patent as granted.

6. *Inventive step starting from D6 (Article 100(a) EPC in combination with Article 56 EPC)*

6.1 Document D6 is a textbook describing various HVDC applications, in particular those using different types of forced-commutated converters, as indicated for instance in the list on page 11-4. The passage following that list indicates that voltage-source converters (VSCs, the term being synonymous with the term "voltage-stiff converter" used in the patent in suit) have advantages relating to control of power, such that they are "especially well suited for back-to-back stations and also for multiterminal stations". The document also describes in the first paragraph on page 11-18 that the use of VSCs enables the direction of power flow to be reversed without changing the polarity of the DC link. Such a station would thus include features 1.1 to 1.4 of claim 1 of the patent in suit, together with feature 1.6, with the exception that the link would not necessarily be in the form of a cable.

6.2 Document D6 also contains on pages 11-32 and 11-33 a section concerning future uses of forced-commutated converters. As indicated in the first paragraph of that section, these uses are expected to be based only on valves having current-turning-off capability, i.e. either VSCs or current-source converters (CSCs) with valves which can turn off the current. In this general context, the document then mentions in the first full paragraph on page 11-33 that expected first applications of these converters include cable transmission.

6.3 The appellant and the intervener argued that, given the discussion of the relative advantages and disadvantages of VSCs and CSCs in the paragraph spanning pages 11-32 and 11-33, in particular the advantage of CSCs for overhead lines that they enable easy limiting of fault currents, the skilled person would have understood that the phrase "for which the voltage-source convertor seems to offer the greatest advantages", at the end of the sentence mentioning cable transmission, refers to all of the listed "first applications", and would thus have concluded that D6 discloses a system which differs from that of claim 1 of the patent in suit only in that it does not disclose the nature of the cable insulation. They argued further that on grounds of cost it would have been obvious to select a polymer-based insulation (as known from D15, as well as from D1, D5, D7 to D12, D14, D16 and D18) rather than the more expensive oil-impregnated paper insulation.

6.4 The board does not find this argument convincing, for the following reasons.

6.4.1 It is not clear from the cited sentence in the first full paragraph on page 11-33 of D6 whether the phrase at the end of the sentence about the advantages of VSCs refers to all of the listed applications (i.e. including cable transmission), or just to the last-mentioned multiterminal schemes. Given the linguistic ambiguity of this sentence, and in the context of the preceding two paragraphs, the board considers it to be entirely plausible that that phrase referred only to the multiterminal schemes, so that the cable transmission systems could make use of CSCs or VSCs. Reading this passage together with the more general teaching about converters on page 11-4 would have led

to the same conclusion. The teaching of D20 referred to by the intervener in the context of this objection (sections 34.2.1 and 34.2.2) has no relevance to this question of interpretation, because it only concerns HVDC interconnection in general, not the specific circumstances of this paragraph of D6. In these circumstances the board is also of the opinion that the further issues relating to fault currents in overhead lines and cables which were raised by the intervener could only with hindsight have been seen as being relevant.

6.4.2 Given this conclusion about the disclosure of D6, in order to arrive at a system according to claim 1 of the granted patent it would be necessary to make two selections, firstly to use VSCs rather than CSCs, and secondly to use polymer-based insulation rather than oil-impregnated paper. However, as argued by the respondent, these two selections are not independent of one another, because together they give rise to a synergetic effect, since by using VSCs, which enable power direction reversal without polarity reversal, the problem of space charges in polymer-based insulation can be avoided. The technical effects resulting from the combination of these two selections with the other features defined in claim 1 of the granted patent therefore go beyond what would be expected from the two individual selections. Hence, following the established case law concerning such synergetic effects, the board concludes that the subject-matter of the claim is not obvious in the light of D6 combined with D15 or any of the other similar documents cited by the intervener.

7. *Inventive step starting from D4 or D13 (Article 100(a) EPC in combination with Article 56 EPC)*

7.1 The appellant and the intervener both presented arguments that the subject-matter of the granted claim 1 lacked an inventive step in the light of document D4 combined with any of the previously-cited documents concerning polymer-insulated cables (see paragraph 6.3 above). The board does not find these arguments convincing, because D4 discloses only back-to-back links, and thus unlike D6 does not even suggest the presence of a cable or other long-distance line between the VSCs. Hence, since as indicated above the argument starting from D6 failed to establish a lack of inventive step, the argument starting from D4 must also fail.

7.2 The appellant and the intervener also both presented arguments that the subject-matter of the granted claim 1 lacked an inventive step in the light of document D13 combined with the previously-cited documents concerning polymer-insulated cables. This objection was based primarily on the embodiment of figure 31 of that document. The board considers however that also this document is less relevant than D6, since it lacks two technical features of the granted claim which were disclosed in D6, namely the presence of a cable linking the converters and the bidirectional nature of the link. Concerning the first of these, the board notes that figure 31 and the final paragraph of column 40 of D13 disclose only the use of a DC transmission line, which could thus be in the form of an overhead line or a cable. Concerning the second of these features, the intervener has argued that although figure 31 and section 6.2 of the description of D13 disclose that this system is unidirectional, it would nonetheless, in

the light of the teaching in column 41, lines 45 to 54, clearly be capable of operating bidirectionally. The board does not find this argument convincing, because even if, as suggested in that cited passage, the diodes and valves were capable of supporting bidirectional transmission, such operation would require reconfiguration of the control circuitry, which is not suggested in that document. The board therefore concludes that, since document D13 is also less relevant than D6, also this objection of lack of inventive step must fail.

8. *Inventive step starting from D15 or similar documents (Article 100(a) EPC in combination with Article 56 EPC)*

The intervener additionally raised an objection of lack of inventive step starting from any of the cited documents describing cables with polymer-based insulation, although only D15 and D11 were discussed in any detail. The intervener proposed that the technical problem addressed by the claimed invention in the light of this prior art was to develop a use for these known cables in applications such as HVDC (see page 25 of the notice of intervention), and then argued that the claimed solution was obvious in the light of documents such as D13, D19 or any of D21 to D23. The board however shares the opinion of the respondent that this technical problem is an artificial one, since a skilled person in the technical field of high voltage transmission systems would not consider starting the design of such a system from the cable, and then adding the electrical equipment. The board therefore considers this objection to be based on hindsight, so that it cannot establish a lack of inventive step in the claimed subject-matter.

9. *Inventive step based on documentary prior art - Summary*

In the light of the conclusions of sections 6 to 8 above, the board concludes that, as far as the documentary prior art is concerned, the ground for opposition under Article 100(a) EPC in combination with Article 56 EPC does not prejudice the maintenance of the patent as granted.

10. *Alleged public prior use - Admittance (Article 13(1) RPBA)*

It is not disputed that the intervener's allegation of public prior use was filed late, i.e. after the three month period defined in Rule 89(1) EPC. Thus by analogy with Article 13(1) of the Rules of Procedure of the Boards of Appeal (RPBA), the board has the discretion to decide whether or not to admit it. In accordance with the established case law on this issue, a key factor to be taken into account is whether the newly-filed objection is sufficiently relevant that it might lead the board to change its decision on the case. In this respect the board considers that in terms of technical content, especially that of D24 and D27, it seems that the system installed in the "Hellsjön Project", as described in those documents, was as defined in claim 1 of the patent in suit. Thus, given the conclusions indicated above concerning the other objections raised against the patent, the board considers that this new objection could potentially lead to a change of their decision. The board therefore exercised its discretion under Article 13(1) RPBA to admit the alleged public prior use, and thus also the documents D24 to D28, into the procedure.



11. *Alleged public prior use - Public availability*

11.1 The board is of the opinion that in the circumstances described in the documents D24 to D28, it is highly likely that, as part of the cooperation between ABB and the utility VB-Elnät described there, employees of VB-Elnät would have gained knowledge of the technical nature of the ABB equipment, specifically as a prerequisite for giving permission for this equipment to be connected to their network. The board therefore agrees with the intervener that the issue which needs to be decided in order to determine whether information concerning the prior use was made available to the public is that of whether those employees were bound by a confidentiality agreement. Contrary to what was argued by the respondent, the board considers it unlikely that the utility would have agreed to the ABB equipment being connected to the network without knowing its nature, at least to the degree of detail defined in granted claim 1 of the patent in suit.

11.2 The board also agrees with the intervener that in these circumstances the burden of proof initially lies with the respondent to establish the existence of a confidentiality agreement. Concerning this issue, the respondent has presented arguments that in the context of a cooperation project between two companies in this technical field, as described for instance in D26, section 3.1, the normal practice would have been for there to have been at least an implicit duty of confidentiality on both companies involved. The respondent has moreover presented supporting evidence for this in the form of the affidavit by Lars Weimers, the project manager of the Hellsjön Project (and inventor of the patent in suit). Contrary to the argument of the intervener, the board considers these

arguments and the supporting evidence to be sufficient to discharge the initial burden of proof on the respondent in this respect. The board considers moreover that the much-cited "up to the hilt" criterion does not apply in the present circumstances, since that case law was developed for the situation in which a prior use was by the opponent, which is not the case here.

11.3 Thus, in the view of the board, the burden of proof has shifted to the intervener to establish that there was no confidentiality agreement. The intervener has however presented no arguments or evidence which objectively might cast doubt on the existence of a confidentiality agreement, but has merely presented speculation in this respect. The respondent has argued that he was not able to do more than this, because all of the evidence relating to the prior use was in the hands of the respondent. The board considers that this is not the case, because at the very least the intervener had the possibility to contact VB-Elnät to enquire of them whether they considered a confidentiality agreement to have been in place. Moreover, the question of whether such confidentiality agreements represented normal practice could have been addressed by making enquiries of other organisations active in the technical field. The intervener seems not to have followed either of these possible courses of action, or provided any other relevant arguments or evidence, and has therefore not discharged the burden of proof in this respect.

11.4 The board therefore concludes that the public nature of the prior use has not been proven, so that it does not form part of the prior art. The substance of the objections of lack of novelty and lack of inventive

step based on the prior use does not therefore need to be addressed.

12. In the light of the above, the board concludes that none of the grounds for opposition raised by the appellant and the intervener prejudices the maintenance of the patent as granted. The main request of the respondent to dismiss the appeal and to reject the opposition of the intervener has therefore to be granted. It was therefore not necessary to discuss the respondent's auxiliary request.

## Order

### For these reasons it is decided that:

1. The appeal is dismissed.
2. The intervener's opposition is rejected.

The Registrar:

The Chairman:



U. Bultmann

G. Flyng

Decision electronically authenticated